

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY  
or  
MONTANA DEPARTMENT OF FISH, WILDLIFE & PARKS

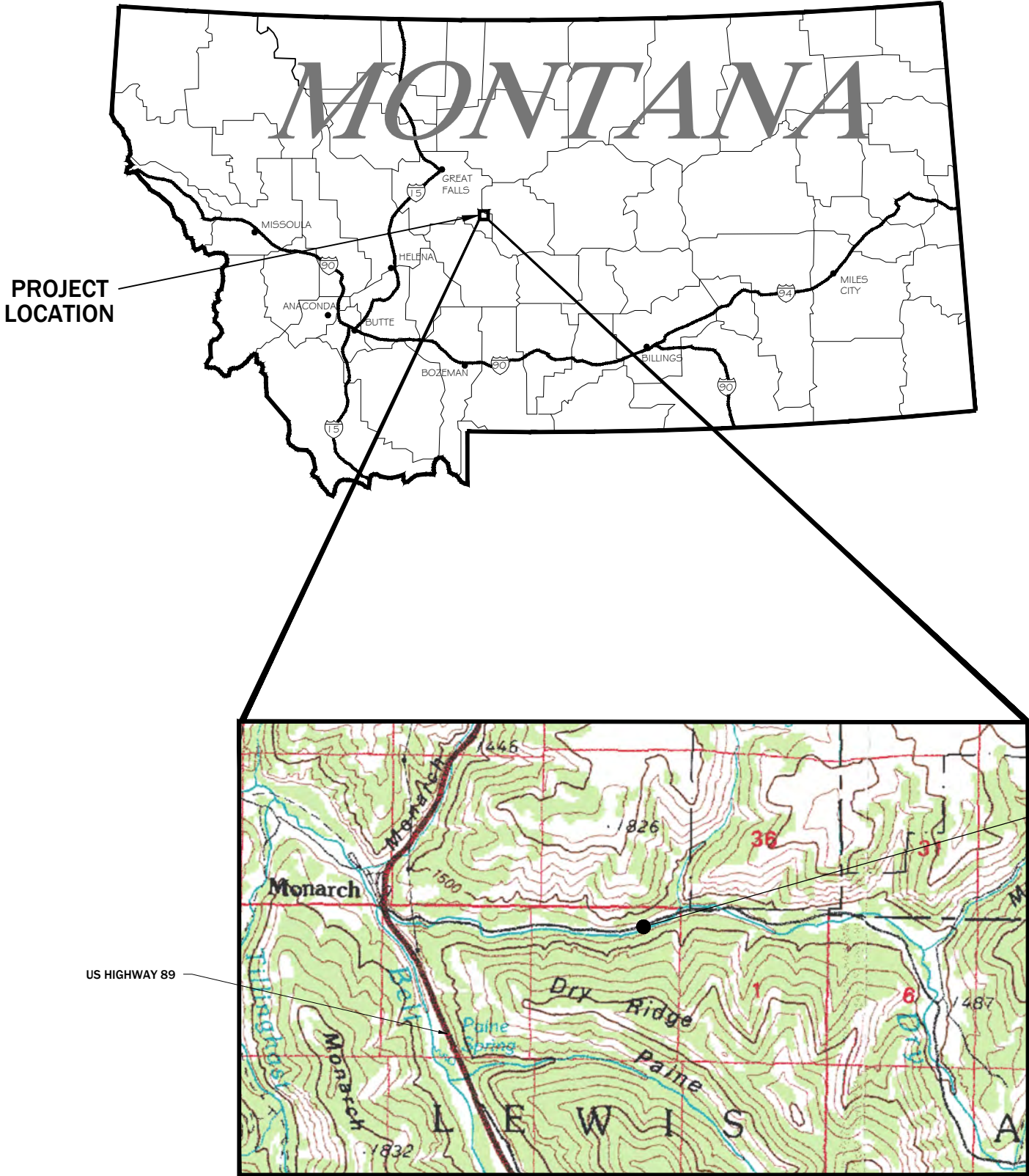
**DRY FORK BELT CREEK  
FISH BARRIER  
LEWIS & CLARK NATIONAL FOREST, MT**

PREPARED BY

PIONEER TECHNICAL SERVICES, INC.  
DATE: 6/23/14

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET AND INDEX
2	SITE PLAN
3	FISH BARRIER STRUCTURE PLAN
4	FISH BARRIER CROSS SECTION AND PROFILE
5	BACKFILL PLAN
6	STRUCTURAL DETAILS
7	BACKFILL TYPICAL SECTIONS AND DETAILS

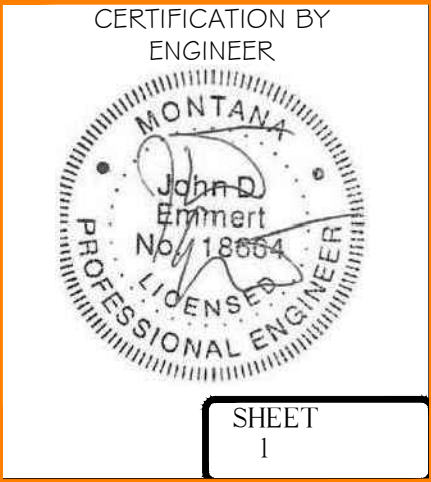


SITE VICINITY MAP  
SOURCE: USGS

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CONSTRUCTION

6/23/2014

SIGNATURE DATE





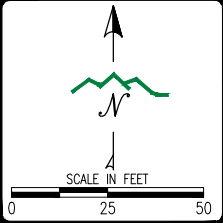
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REVISION:	BY:	DESC:

DRAWN BY:	JJI
DESIGNED BY:	JDE
CHECKED BY:	JDE
APPROVED BY:	GEA
PROJECT NO:	10182
DATE:	6/23/14

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COORD SYS/ZONE:	MSP NAD83
DATUM:	NAVD88
UNITS:	INT. FEET
SOURCE:	PIONEER

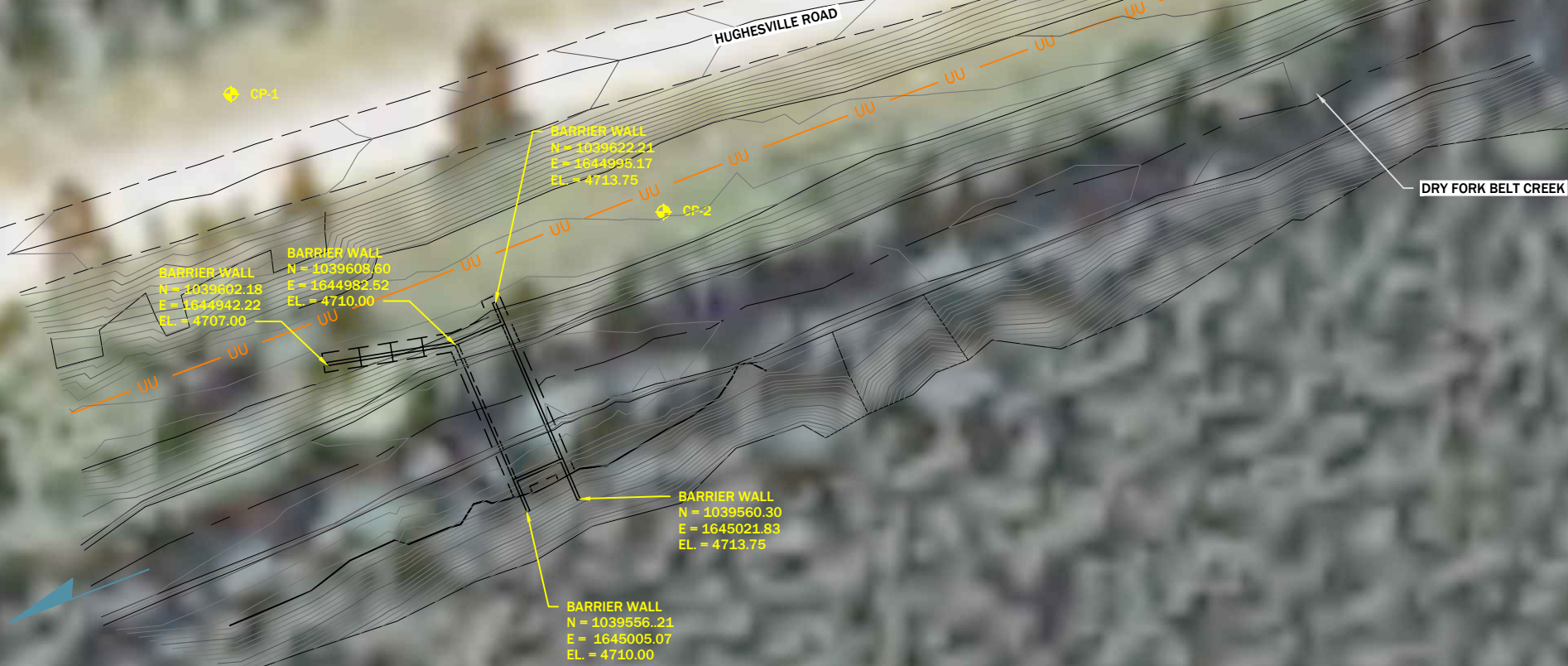


DEQ or FWP  
DRY FORK BELT CREEK  
FISH BARRIER

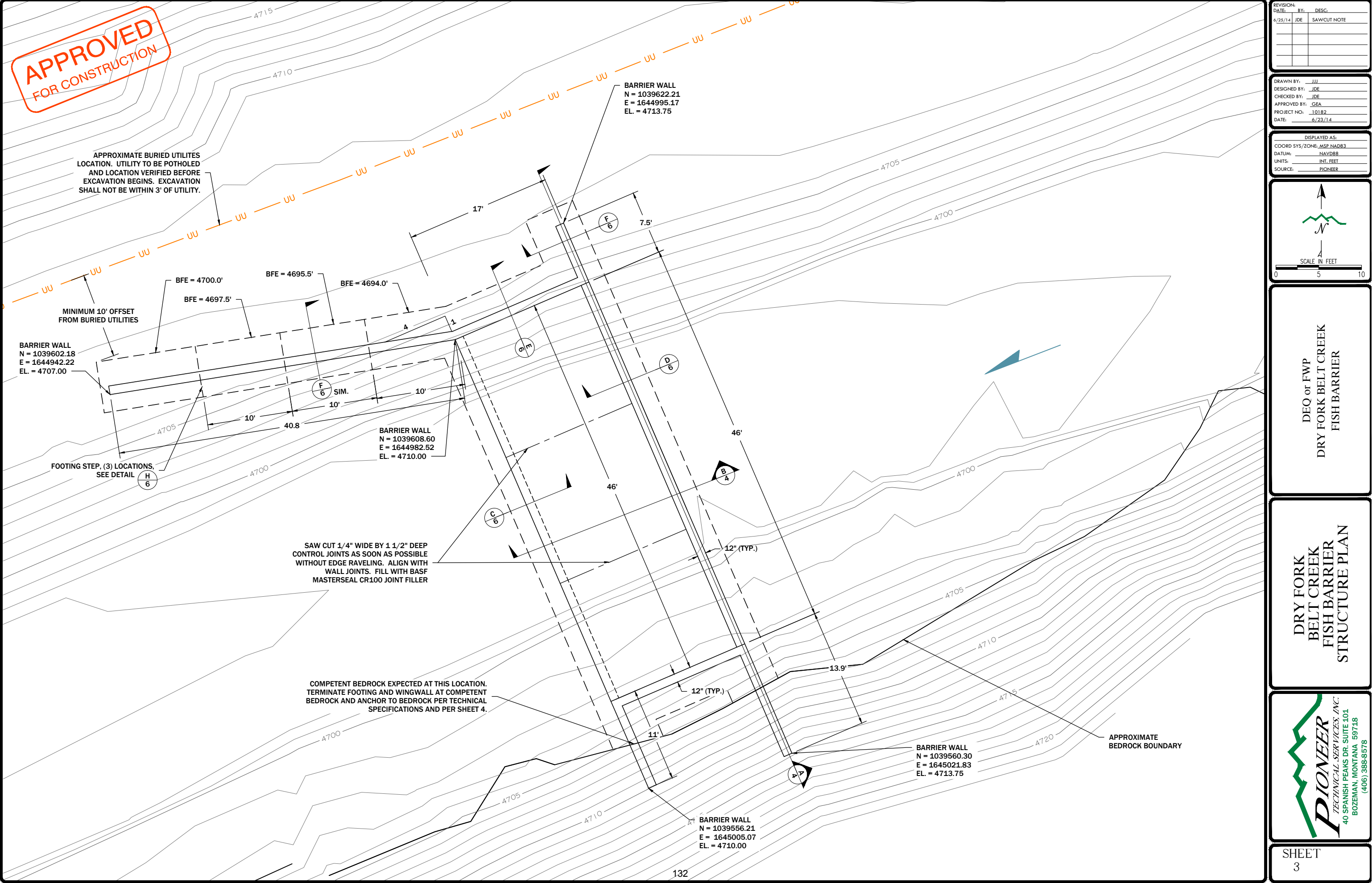
DRY FORK  
BELT CREEK  
FISH BARRIER  
SITE PLAN



SHEET  
2



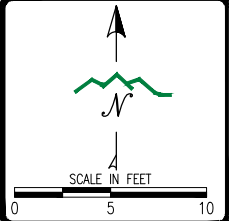




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6/25/14	JDE	SAWCUT NOTE

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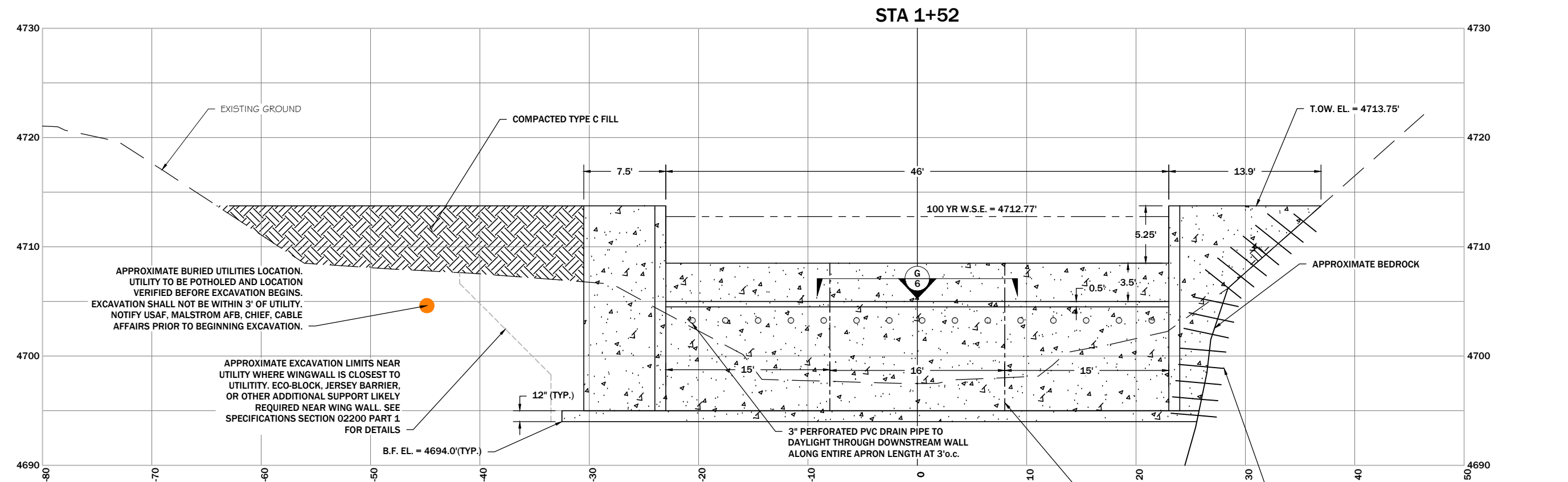


DEQ or FWP  
DRY FORK BELT CREEK  
FISH BARRIER

DRY FORK  
BELT CREEK  
FISH BARRIER  
STRUCTURE PLAN



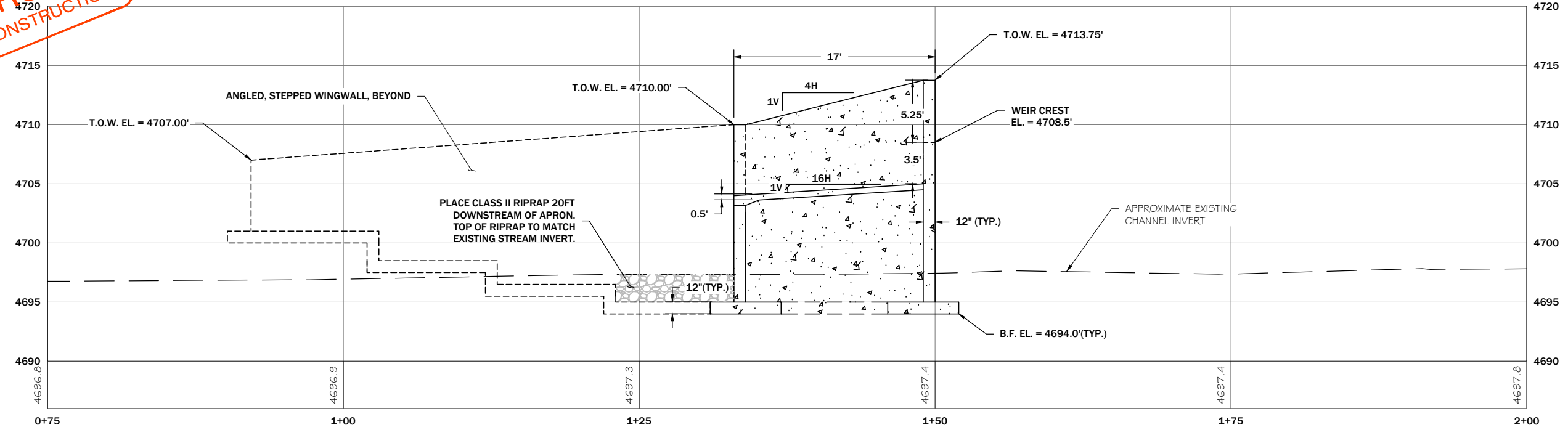
SHEET  
3



**A**  
**3** FISH BARRIER SECTION  
SCALE: 1" = 10'

ROCK ANCHOR @ 18" o.c. EMBEDDED MIN. 18" INTO BEDROCK. ANCHOR INSTALLED PERPENDICULAR TO BEDROCK SURFACE EXTENDED 32" INTO CONCRETE OR TO TOP OF CONCRETE LESS MINIMUM COVER. REMOVE SURFACIAL MATERIAL TO EXPOSE COMPETENT BEDROCK AS DETERMINED BY THE ONSITE OVERSIGHT ENGINEER. INSTALL ANCHOR ALONG ENTIRE FOOTING WIDTH AND ALONG ENTIRE WINGWALL HEIGHT. CLEAN HOLE WITH AIR OR WATER PRIOR TO INSERTING RESIN AND ROCK ANCHOR.

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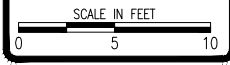


**B**  
**3** FISH BARRIER PROFILE  
SCALE: 1" = 10'

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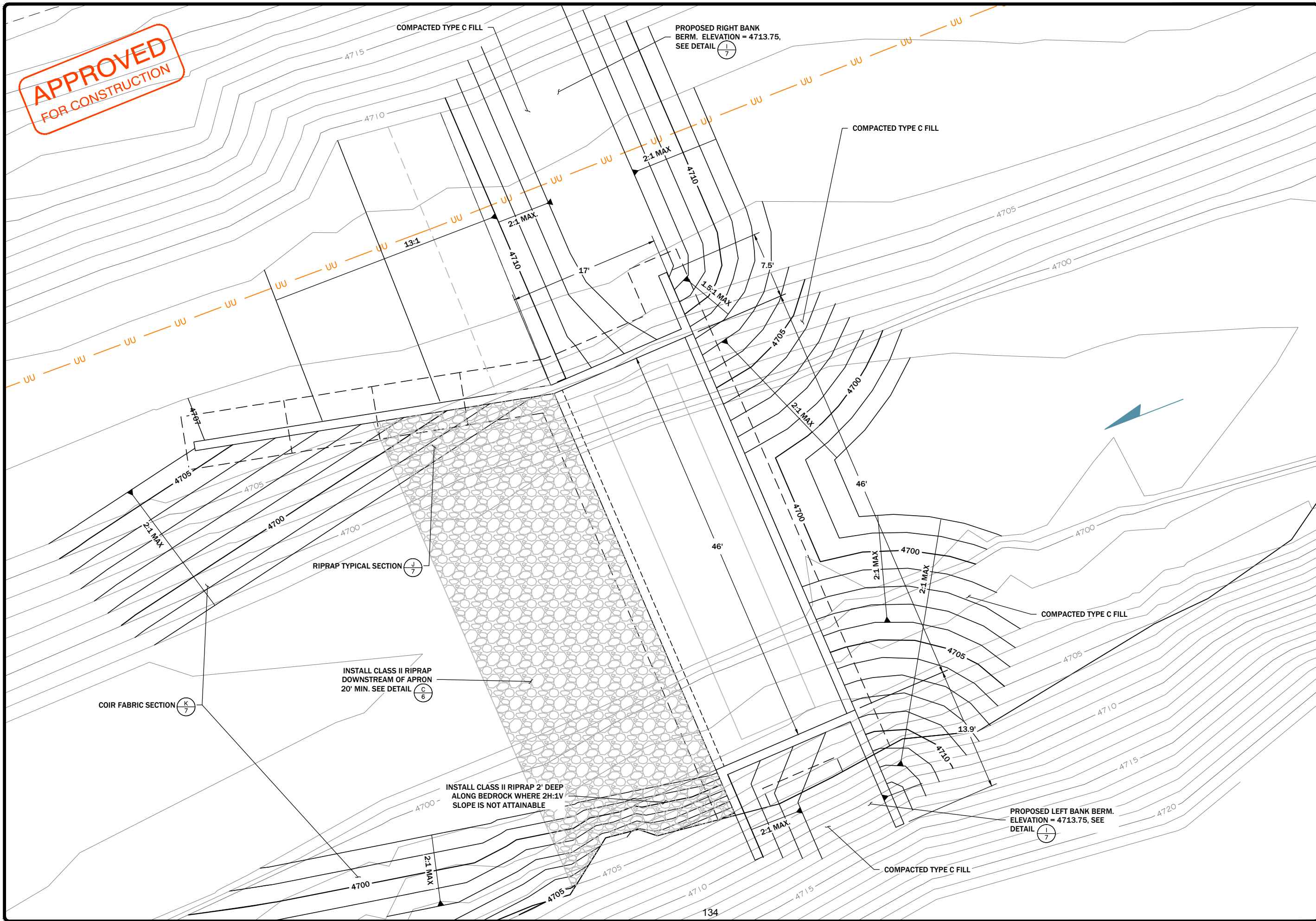
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FISH BARRIER

DRY FORK  
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FISH BARRIER  
CROSS SECTION  
AND PROFILE

**PIONEER**  
TECHNICAL SERVICES, INC.  
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SHEET  
4

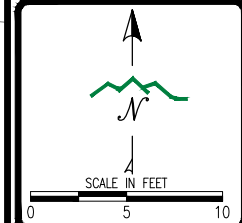
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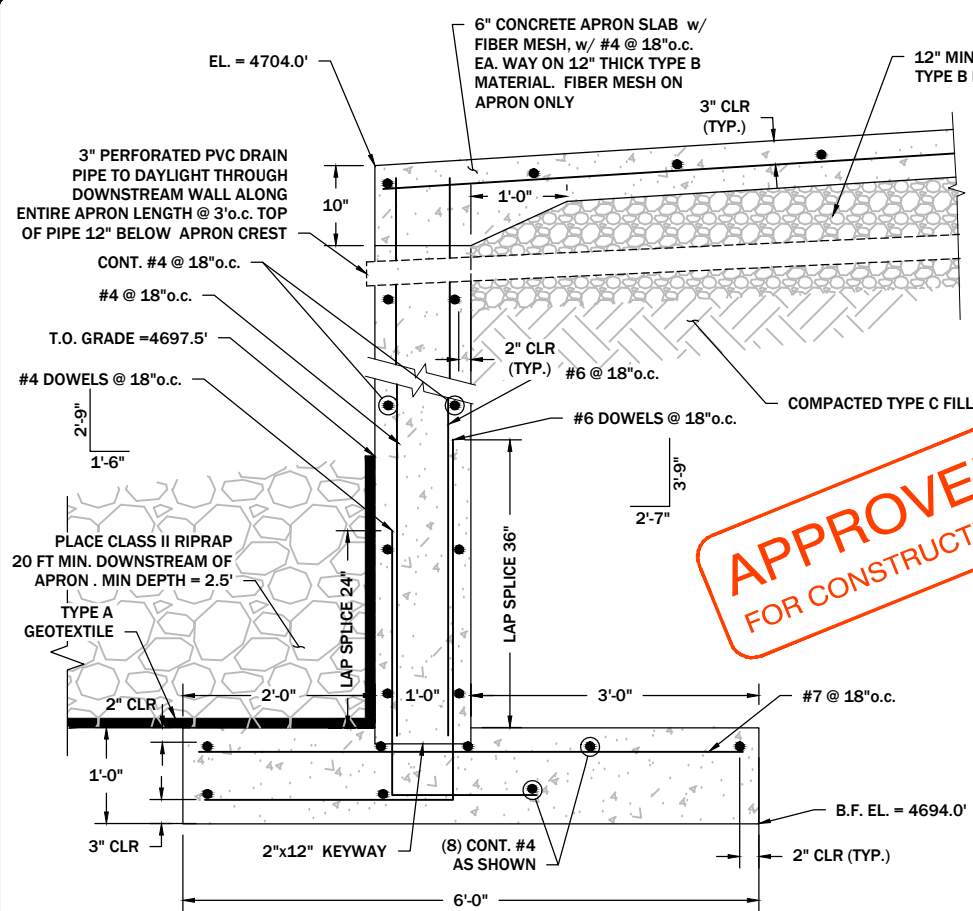
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BACKFILL PLAN

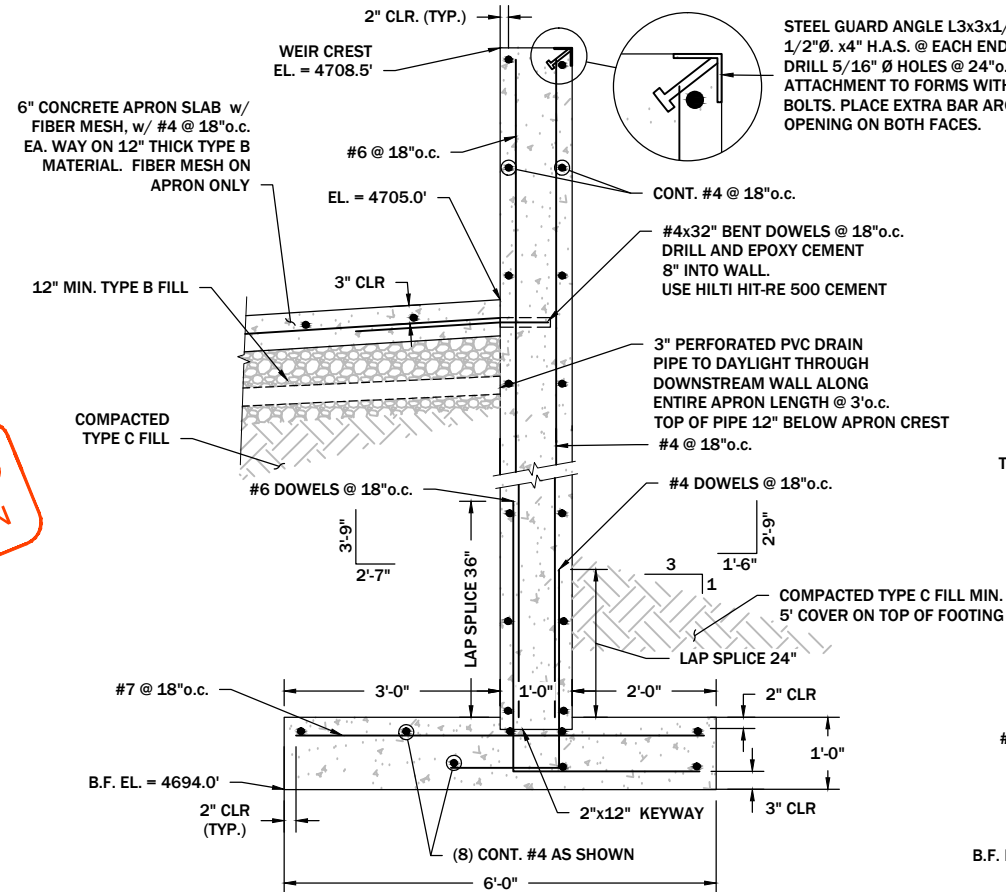


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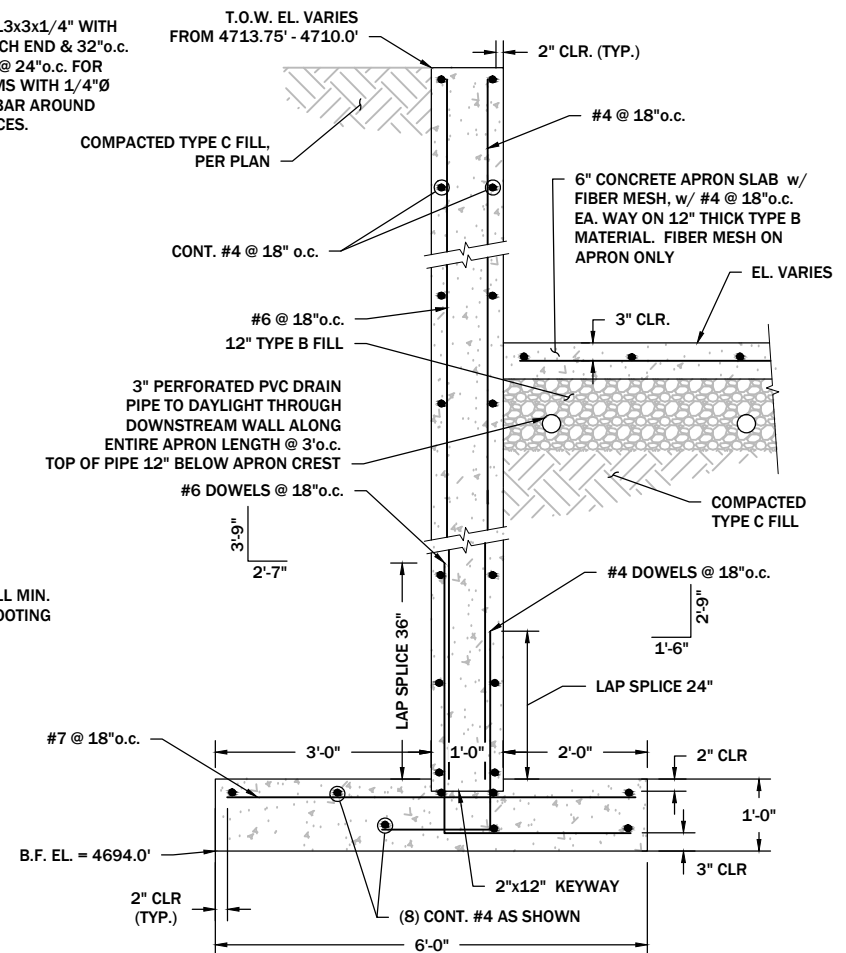




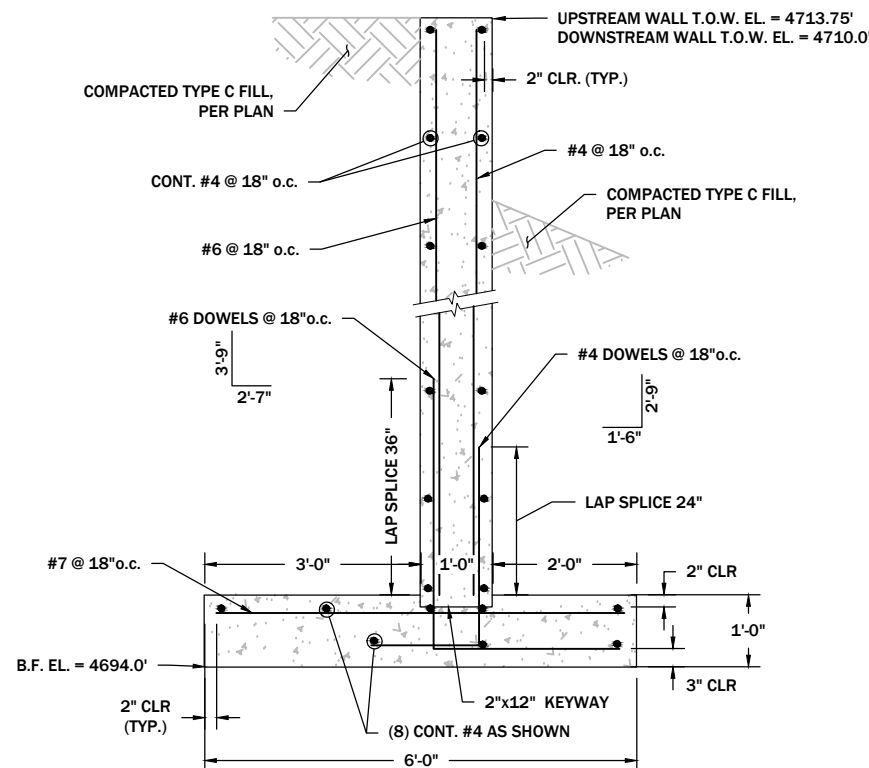
**C**  
**3,5** DOWNSTREAM WALL TYPICAL SECTION  
SCALE: 1/2" = 1'-0"



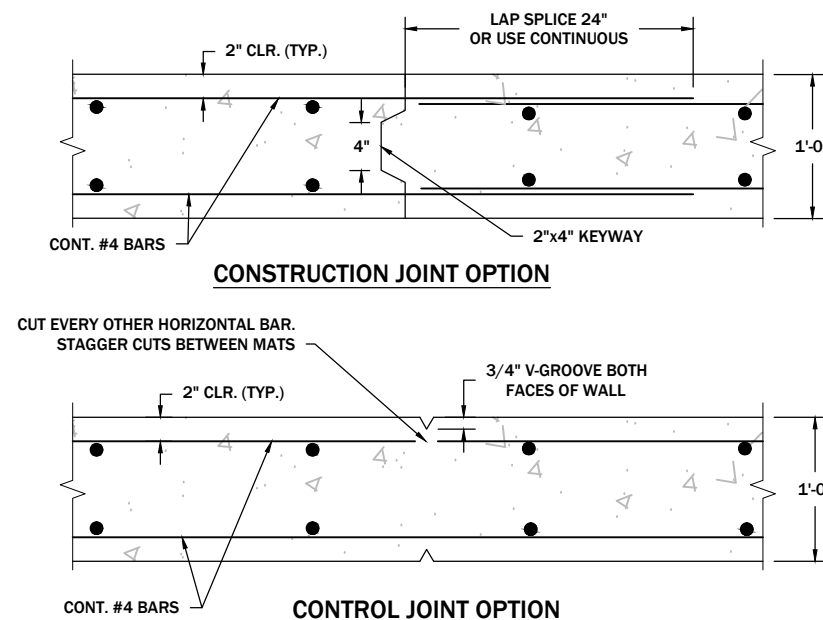
**D**  
**3** UPSTREAM WALL TYPICAL SECTION  
SCALE: 3/8" = 1'-0"



**E**  
**3** END WALL TYPICAL SECTION  
SCALE: 3/8" = 1'-0"

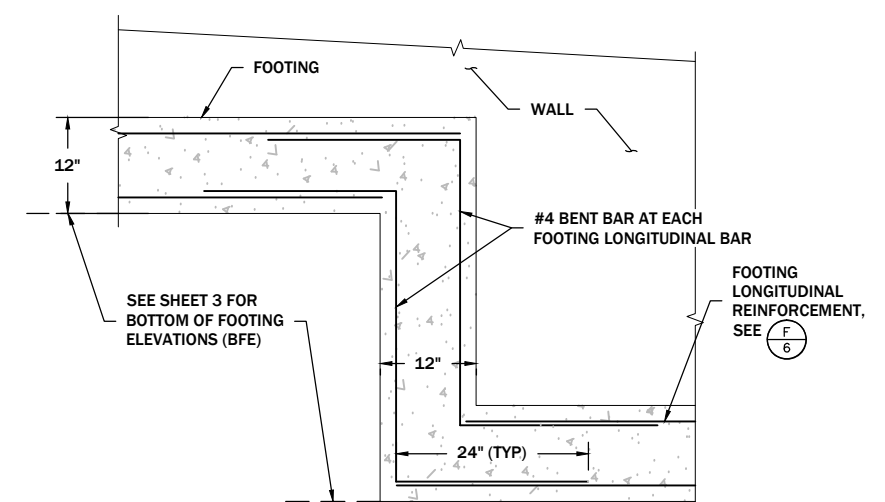


**F**  
**3** WINGWALL TYPICAL SECTION  
SCALE: 3/8" = 1'-0"



NOTE:  
1. EITHER OPTION CAN BE USED AT WALL JOINTS.

**G**  
**3,4** REQUIRED WALL CONTROL JOINTS  
SCALE: 3/4" = 1'-0"



**H**  
**3** FOOTING STEP DETAIL  
SCALE: 1/2" = 1'-0"

#### GENERAL NOTES:

1. PROVIDE CORNER BARS WITH 24" LEGS AT ALL HORIZONTAL STEEL REINFORCING BARS.
2. LAP SPICE NO. 4 BARS BY 24", NO. 5 BARS BY 30" AND NO. 6 BARS BY 36".
3. PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES OF CONCRETE WALLS AND APRON.
4. ALL CONTROL AND CONSTRUCTION JOINTS SHOWN FOR WALLS ARE REQUIRED.
5. DO NOT SUBJECT WALLS OR SLABS TO SOIL PRESSURE, STREAM FLOW, OR OTHER LOADINGS UNTIL AFTER THE MINIMUM CURE TIMES HAVE BEEN MET AND UNTIL THE REQUIRED MINIMUM 28-DAY CONCRETE COMPRESSIVE STRENGTH HAS BEEN ACHIEVED

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SCALE IN FEET  
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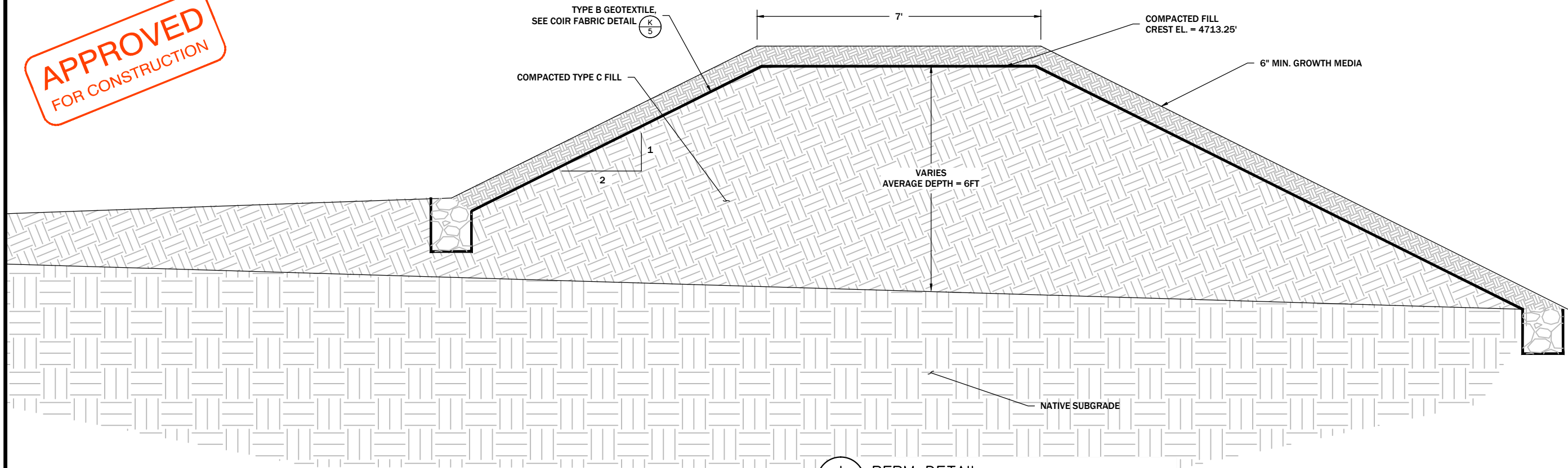
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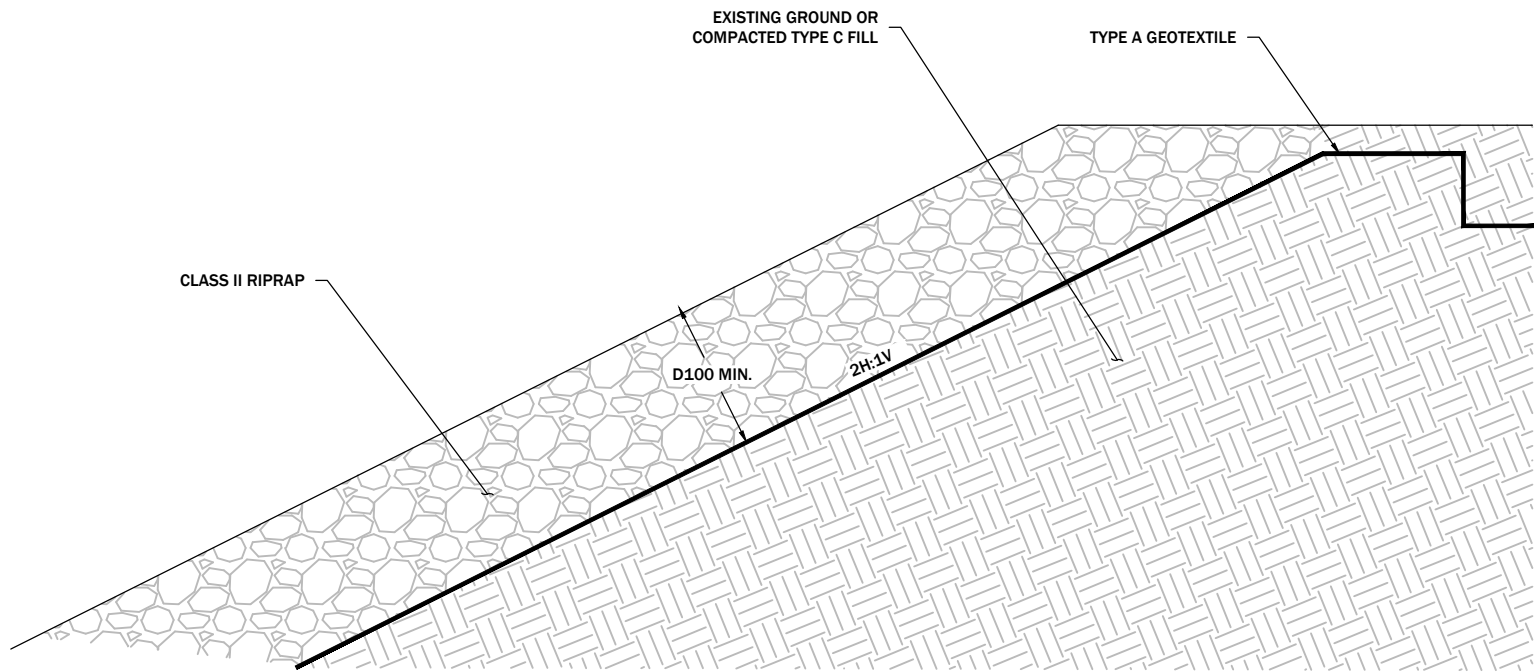
SHEET  
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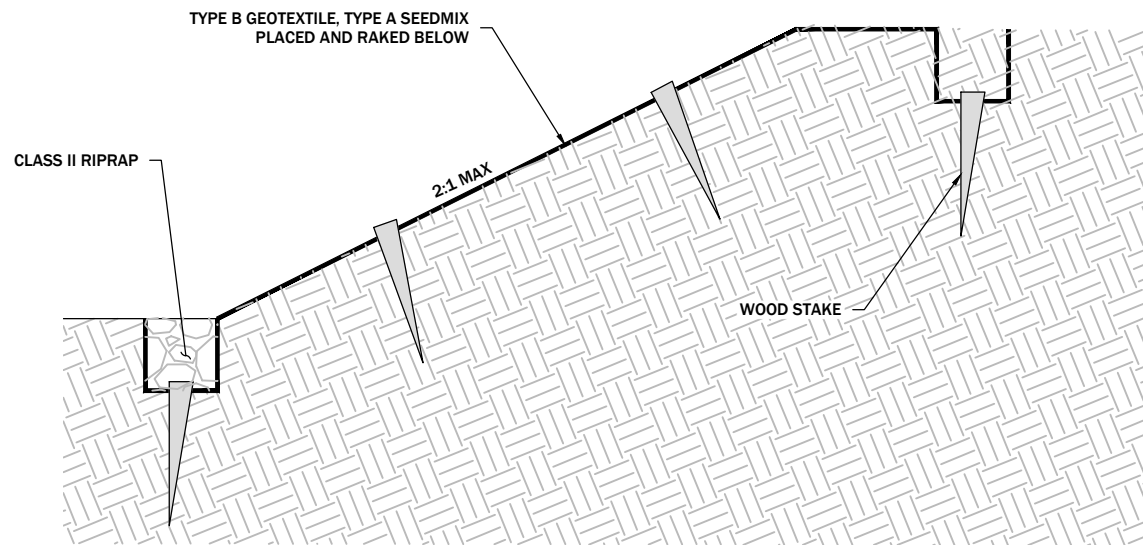


1  
5 BERM DETAIL  
SCALE: 3/8" = 1'-0"

- NOTES:
1. ALL DISTURBED STREAM BANKS SHALL BE DRESSED WITH COVER SOIL SEEDED AND PROTECTED WITH TYPE B GEOTEXTILE.
  2. TYPE B GEOTEXTILE TO BE STAKED AT 12"oc ON OVERLAPS AND 24" ELSEWHERE.



J  
5 RIPRAP DETAIL  
SCALE: 3/8" = 1'-0"



K  
5 COIR FABRIC DETAIL  
SCALE: 3/8" = 1'-0"

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0 VARIES

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FISH BARRIER

DRY FORK  
BELT CREEK  
FISH BARRIER  
BACKFILL TYPICAL  
SECTIONS & DETAILS



SHEET  
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